



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

W

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/926,714 | 03/05/2002 | Yasutaka Ito | 216714US2PCT | 3514 |
| 22850 | 7590 | 05/07/2004 | | EXAMINER |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | PAIK, SANG YEOP |
| | | | ART UNIT | PAPER NUMBER |
| | | | | 3742 |

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/926,714 | ITO ET AL. | |
| | Examiner | Art Unit | |
| | Sang Y Paik | 3742 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/16/04 - 1/26/04, 10/22/02, 12/16/01</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is no proper antecedent basis for “the resistance heating element composed of two or more circuits” and “the resistance of heating element composed of a different circuits”. It is unclear whether the applicant intended to mean that the resistance heating element is composed of two or more different circuits. Furthermore, in claim 4, there is a multiple recitation of “resistance heating element”. It is unclear whether there is another different heating element having a concentric circles-like or spiral shape than “a resistance heating element” that was first cited on line 2 of claim 1. Also how are the recited “resistance heating elements” of claim 4, on line 4, distinguished from “the resistance heating element composed of two or more circuits” recited on line 6 of claim 1. Clarification is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 9, 10, 12, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuhiro et al (JP 0677148).

Kazuhiro et al anticipates the ceramic heater claimed including a disc shaped aluminum nitride ceramic substrate having a resistance element formed therein with the resistance element having a plurality of circuits in the outer circumference periphery and a plurality of spiral and concentric circle circuits in the inner portion of the ceramic substrate (see Figure 5). Kazuhiro et al also shows that the ceramic substrate (2) has the outer diameter of 200 mm (or 8 inch), and it also shows that there are at least four heating element circuits in the ceramic heater which satisfies the claimed expressions of $n \geq r^{1.94} \times (0.5 \times 10^{-4})$ and $n \geq r^{1.94} \times 10^{-4}$.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiro et al (JP 06077148) in view of Burkhart et al (US 6,469,283).

Kazuhiro et al shows the ceramic heater claimed including a temperature sensor but does not show the claimed control unit, memory unit, and the operation unit for calculating electric power for the heating element.

Burkhart et al shows a ceramic heater having a temperature sensor with a plurality of heating elements to measure and control the temperature of the ceramic heater. Burkhart further includes a control unit which includes a memory as well as the operation unit such as the

processor unit that calculates varying electric powers to the heating elements so as to maintain the desired heating temperature.

In view of Burkhart et al, it would have been obvious to one of ordinary skill in the art to adapt Kazuhiro et al with the claimed units to provide the desired heating temperature across the ceramic heater to more efficiently heat an object such as a wafer.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carman et al (US 5,294,778), Nobori et al (US 5,616,024), Yoshida et al (US 6,080,970) and Arena et al (US 5,635,093).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (6:30-4:00) First Friday Off.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Y Paik
Primary Examiner
Art Unit 3742

S. Paik

syp